

REMARKS

Claims 1, 2 and 4-14 are pending. Claims 1, 4 and 6 have been amended, claim 3 has been canceled and claims 10-14 have been newly added. No new matter is presented.

Claims 1, 2 and 9 were rejected under 35 USC 102(b) as being anticipated by Ogata (JP 05100186). This rejection is respectfully traversed.

Ogata discloses an image sensor having a plurality of unit photosensitive elements arranged therein wherein each unit photosensitive element consists of the following three elements: a photosensitive element proper, a lens corresponding thereto, and a pinhole located between the lens and the unit photosensitive element and having an opening sufficiently smaller than the opening of the lens located near the focal length of the lens.

The pinhole makes it possible to detect the intensity of only such light as travels to the lens by taking a path close to the optical axis. By arranging a plurality of such optical systems (lenses) and making their respective optical axes point in arbitrary directions, it is possible to detect the intensity distribution of spatially scattered light (as described in paragraph [0010] of Ogata).

In Ogata's image sensor, one lens corresponds to one unit photosensitive element. This structure is different from the structure recited in claim 1, namely "the photosensitive surface being divided into regions, each corresponding to one of the image formation units, where each region includes a plurality of photosensitive elements arranged therein." In other words, claim 1 recites a structure in which the areas that correspond one-to-one to the image formation units each include a plurality of photosensitive elements. Moreover, Ogata samples part of the subject image by the use of the pinholes, and thus is not considered to form a two-dimensional image on the photosensitive elements (as is recited in claim 1).

Ogata states that the photosensitive elements do not necessarily have to be arranged on a one-to-one correspondence basis, but may be arranged so that a plurality of them, for example, in the form of small pixels of a CCD, correspond to each lens. This, however, is not for receiving light

representing a two-dimensional image of the subject. The reason is that, with pinholes, it is impossible to obtain a two-dimensional image of the subject.

As discussed above, the structure recited in our claim 1 is different from the structure disclosed by Ogata. Thus, Ogata fails to teach or suggest the features of claim 1. Claims 2 and 9 are allowable at least due to their dependencies from claim 1. Applicants request that this rejection be withdrawn.

Claims 3-5 were rejected under 35 USC 103(a) as being unpatentable over Ogata in view of Nakai, U.S. Patent No. 5,396,090. This rejection is respectfully traversed.

Claim 1 was amended to incorporate the limitations from claim 3. Thus, claim 1 will be discussed as if it had been rejected in view of Ogata and Nakai.

The Examiner admits that Ogata fails to teach a restricting member for restricting independently for each of the plurality of image forming units, optical paths along which the light beams are focused, but asserts that Nakai teaches this feature and that it would have been obvious to combine Ogata and Nakai.

Nakai discloses a solid-state image sensor wherein each photosensitive portion is provided with a micro lens and wherein adjacent micro lenses are, along the edges of their bottom portions, separated by partition walls (51). However, according to Nakai, as is evident in Fig. 1, the partition walls 51 separate the micro lenses from one another, and do not as serve a restricting member for restricting image-forming light beams. Therefore, the features of claim 1 are not taught or suggested by Ogata, Nakai, or a combination thereof.

Claims 4-6 are allowable at least due to their respective dependencies. Applicants request that this rejection be withdrawn.

Claim 7 was rejected under 35 USC 103(a) as being unpatentable over Ogata in view of JP 59-50042. This rejection is respectfully traversed.

JP 59-50042 discloses an optical apparatus comprising a lens array 10, a pinhole mask 12, and a film 20. The pinhole mask 12 is disposed near the focal length of the lens array 10. Thus, the individual lenses of the lens array 10 do not form a two-dimensional image of the subject on the film 20. The individual lenses each simply image one point on the subject. Ogata likewise fails to teach forming a two-dimensional image.

Moreover, according to JP 59-50042, the pinhole mask 12 extracts part of the light beam produced by each small lens in a manner different from one small lens to another (that is, the pinhole mask 12 samples different parts of the subject image), and thus does not serve as a deflecting member for deflecting light.

As discussed above, Ogata's image sensor does not have a structure in which areas that correspond one-to-one to individual image formation units each include a plurality of photosensitive elements, nor does it disclose a restricting member for restricting image-forming light beams.

Therefore, even if combined, Ogata and JP 59-50042 does not teach or suggest the features of claim 7. Applicants respectfully request that this rejection be withdrawn.

Claim 8 was rejected under 35 USC 103(a) as being unpatentable over Ogata in view of Enomoto (U.S. Patent No. 5,321,297). This rejection is respectfully traversed.

Claim 8 depends from claim 1. Ogata fails to disclose the features of claim 1, and Enomoto likewise fails to disclose or suggest these features. Therefore, the features of claim 8 are not taught or suggested by Ogata, Enomoto, or a combination thereof. Applicants respectfully request that this rejection be withdrawn.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 325772019100.

Dated: May 5, 2004

Respectfully submitted,

By Deborah S. Gladstein
Deborah S. Gladstein

Registration No.: 43,636
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 300
McLean, Virginia 22102
(703) 760-7753